

**FACT SHEET FOR NPDES PERMIT WA-003141-1**  
**DAKOTA CREEK INDUSTRIES**

**TABLE OF CONTENTS**

INTRODUCTION .....	3
BACKGROUND INFORMATION .....	4
DESCRIPTION OF THE FACILITY .....	4
PERMIT STATUS.....	6
SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT .....	6
WASTEWATER CHARACTERIZATION .....	7
PROPOSED PERMIT LIMITATIONS.....	7
TECHNOLOGY-BASED EFFLUENT LIMITATIONS .....	8
SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS .....	10
Numerical Criteria for the Protection of Aquatic Life.....	10
Numerical Criteria for the Protection of Human Health.....	10
Narrative Criteria .....	10
Antidegradation.....	11
Critical Conditions .....	11
Mixing Zones.....	11
Description of the Receiving Water.....	11
Surface Water Quality Criteria .....	12
Consideration of Surface Water Quality-Based Limits for Numeric Criteria .....	12
Whole Effluent Toxicity .....	14
Human Health .....	14
Sediment Quality .....	15
GROUND WATER QUALITY LIMITATIONS.....	15
COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED AUGUST 5, 1995 AND MODIFIED MAY 7, 1996.....	16
MONITORING REQUIREMENTS .....	17
LAB ACCREDITATION .....	17
OTHER PERMIT CONDITIONS .....	17
REPORTING AND RECORDKEEPING .....	17
NON-ROUTINE AND UNANTICIPATED DISCHARGES .....	17
SPILL PLAN .....	18
GENERAL CONDITIONS .....	18
PERMIT ISSUANCE PROCEDURES .....	18
PERMIT MODIFICATIONS .....	18
RECOMMENDATION FOR PERMIT ISSUANCE .....	18

REFERENCES FOR TEXT AND APPENDICES.....	19
APPENDIX A--PUBLIC INVOLVEMENT INFORMATION.....	20
APPENDIX B--GLOSSARY .....	21
APPENDIX C--FIGURES.....	24
APPENDIX D--TECHNICAL CALCULATIONS.....	27
APPENDIX E--RESPONSE TO COMMENTS.....	34

## INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the State of Washington to administer the NPDES permit program. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see [Appendix A--Public Involvement](#) of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. Comments and the resultant changes to the permit will be summarized in [Appendix E--Response to Comments](#).

GENERAL INFORMATION	
Applicant	Dakota Creek Industries, Inc.
Facility Name and Address	P.O. Box 218 Anacortes, WA 98221
Type of Facility	Ship Building and Repairing
SIC Code	3731
Discharge Location	Waterbody Name: Guemes Channel Drydock Outfall 002 Latitude: 48° 31.38' N Longitude: 122° 36.69' W Stormwater Outfall 001 at "L" Dock Latitude: 48° 31.315' N Longitude: 122° 36.63' W
Waterbody ID Number	WA-03-0020

## BACKGROUND INFORMATION

### DESCRIPTION OF THE FACILITY

Dakota Creek Industries, Inc. (Dakota Creek) is a ship construction and repair facility located on Guemes Channel in Anacortes, WA (Figure 1). Operations are conducted on four acres of private land and approximately 10 acres of the Port of Anacortes Marine Terminal (Figure 2). The site has supported water-dependent uses since approximately 1890.

Dakota Creek provides service to a wide variety of ship types, predominantly with steel hulls. About 25 vessels are repaired in a typical year. Ship repair services provided by Dakota Creek include engine and propulsion repair as well as hull maintenance. Various shops at the shipyard conduct machining, steel fabrication, painting, sand blasting and pressure washing.

Vessels are hauled out of the water for bottom repairs using either the floating dry dock or the Syncrolift.

The floating dry dock is moored at the Port of Anacortes Pier #1 and has been in service since February 1994.

### Capacity of Drydocks and Marine Railway

Operation	Tonnage Tons	Length Feet	Width Feet
Drydock	9,000	314	90
Syncrolift	5,000	275	75

About 45 percent of the vessels hauled out require pressure washing. The dry dock is fully able to contain pressure wash wastewater. The east side of the dry dock is bermed and the southeast corner has a removable collection tank. The tank has three settling chambers for collecting paint solids, and Absorbent W is used to remove free oils. A significant amount of sludge accumulates in the sump. Before the dry dock is lowered, the collection sump is removed and hoisted ashore where it is routinely cleaned and recharged for the next use. The Department obtained agreement with the Anacortes Wastewater Treatment Facility to accept pressure wash wastewater. The previous denial to accept the wastewater was based on the lack of pretreatment standards for Dakota Creek. This reissued permit contains these limits.

The Syncrolift and its transfer rails are just east of the dry dock centrally located on the Dakota Creek property. The Syncrolift provides a mechanism for hauling ships out of the water and then transferring them onto shore for repair work. While repairs are not conducted over the water, the transfer rails are located in a paved area of the yard just on shore and provides containment of pressure wash wastewater.

A containment and collection system for the Syncrolift was a requirement of the previous permit.

About 200 to 300 tons of sandblast grit is used in a typical year. About 90 percent of the sandblasting is used for cleaning hulls in dry dock. The rest is used in ship holds (5%), on ship superstructures (5%), and on small parts in a sandblast shed (5%).

Spent grit is collected in a three-sided, roofed building that can hold up to 100 tons. Dakota Creek contracts with Industrial Services, Inc., to transport the spent grit to LaFarge Cement in Seattle for recycling as aggregate in cement manufacture.

The west side of the repair yard was upgraded to eliminate direct discharge of storm water to Guemes Channel. All storm water runoff from the paved portions of the yard pass through enhanced type 1 oil separating catch basins before joining the city storm drain system which ultimately discharges to Guemes Channel.

On the east side of the yard, storm water generally infiltrates into the ground or flows by sheet runoff into the channel. There are two catch basins by "L" dock, east of the Syncrolift, that allow for settling prior to discharge. This outfall is directly over a city storm water outfall.

A fabrication area is located in the unpaved area near the old marine railway sidetrack allowing stormwater to infiltrate.

Wastes generated by shipyard activities include spent abrasive grits and wash water (discussed above), spent solvents, antifreeze, oils and paints, various cleaners and anti-corrosive compounds, paint chips, scrap metal, welding rods, containers, and miscellaneous trash such as paper and glass. These pollutants may enter the wastewater stream through the application and preparation of paints and the painted surface; handling and storing paints, solvents, thinners, oils and antifreeze, including accidental spills; the fracturing and breakdown of abrasive grits, and the repair and maintenance of mechanical equipment. Emerald Services and Romic Environmental Services recycle and dispose solvents and degreasers. Emerald Services or other tank cleaning subcontractors haul bilge water.

In a public private partnership, the site will be redeveloped by the Port of Anacortes and Dakota Creek Industries. Stormwater collection, routing, and treatment will be integral with this work.

The primary sources of wastewater at shipyards are from pressure wash wastewater and storm water. Secondary sources include cooling water, pump testing, gray water, sanitary waste, bilge water and ballast water. Engine room bilge water and oily wastes are typically collected and disposed of through a licensed disposal company.

Dry dock flooding presents a potential for contamination of state surface waters as waters flood the dry dock floor and the dry dock is submerged. Materials that may have accumulated on the drydock floor, e.g. spent abrasive grit, spills of oils, paints and solvents, present pollution sources to state waters.

Dakota Creek has made tremendous strides to minimize the pollution caused by its operations. The yard has made a large investment in employee training, a key component of pollution prevention, waste minimization, and best management practices (BMPs) implementation efforts.

### PERMIT STATUS

The previous permit for this facility was issued on January 5, 1996, and modified on January 4, 1999, to remove the marine railway. The previous permit placed effluent limitations on:

#### Pressure Wash Wastewater

All pressure wash water discharges to Guemes Channel are prohibited. Discharges are hauled to Seattle for discharge to the sanitary sewer.

#### Dry Dock Discharges: Outfall 002

<u>Parameter</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Oil and Grease	10 mg/L	15 mg/L
Turbidity	-----	5 NTU above background
pH	within a range of 6.0 to 9.0 standard units	

#### Stormwater Discharge: Outfall 001

<u>Parameter</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Oil and Grease	10 mg/L	15 mg/L
pH	within a range of 6.0 to 9.0 standard units	

Bilge and ballast water discharges could not exceed oil and grease concentration of 10 mg/L and could not cause any visible sheen in the receiving waters. Bilge and ballast water could not be discharged to state waters if solvents, detergents, or other known or suspected additives or contaminants have been added, unless a state water quality variance or modification has been granted specific to that instance.

Oily bilge waters from machinery or pump room spaces were prohibited from discharge to state waters.

An application for permit renewal was submitted to the Department on March 12, 2000 and accepted by the Department on March 21, 2001.

### SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on November 30, 2005.

Dakota Creek Outfall 001 stormwater discharges have violated the marine water quality standards for copper, nickel and zinc for Guemes Channel.

## WASTEWATER CHARACTERIZATION

The proposed wastewater discharge is characterized for the following regulated parameters:

**Table 1: Wastewater Characterization**

Outfall	Copper µg/l	Nickel µg/l	Zinc µg/l	Turbidity NTU
001 Stormwater	390	26	1,023	81
Acute Marine Criteria	4.8	74	90	5.0 over background
Average of samples June 1999 to July 2002				

The acute marine criteria are in the form of the dissolved state. No site specific translators exist for Guemes Channel during critical conditions and no TSS data on the receiving water exists, therefore, the Department derived dissolved fraction for marine waters is used. This fraction is 83 percent dissolved fraction for copper, 99 percent dissolved fraction for nickel, and 94.6 percent dissolved fraction for zinc. The average of the samples from June 1999 to July 2002 was multiplied by the translator to derive the dissolved fraction which is then comparable to the acute marine criteria. This shows even the average copper and zinc levels exceed the criteria. A reasonable potential evaluation shows nickel will also exceed the criteria.

### Hydroblast Wastewater

Measurements at other shipyards and in a 1993 METRO study found hydroblast wastewater well above acute and chronic water quality criteria.

## PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in an NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC), or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants.

Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

#### *TECHNOLOGY-BASED EFFLUENT LIMITATIONS*

Hydroblast wastewater collection, treatment and recycle, evaporation or hauling to a sanitary sewerage system is determined to be the technology-based limitation cited in Chapter 173-220 WAC as all known available and reasonable methods of treatment (AKART). All process water discharges directly to Guemes Channel are prohibited.

Dakota Creek will be required to continue to follow and improve as necessary best management practices (BMPs). The drydock and Syncrolift and transfer rails will be cleaned to remove spent blasting abrasives and other solid wastes including paint chips, scrap metal, wood, plastic, paper and welding rods. Prior to undocking, the drydocks will be returned to a clean condition using dry cleanup methods (i.e. brooms, vacuums, etc.). The minimum amount of water flushing necessary to return the drydock to a clean condition may be used as a final cleanup step as long as the wastewater is not directly discharged to Guemes Channel. No change in turbidity between drydock flood waters and the ambient water will be allowed. Also no visible sheen will be allowed. Photographs will be taken and maintained in a log book to demonstrate the condition of the drydock floors prior to launching a vessel.

Waters of the state are especially vulnerable from painting and hull preparation directly over water. Over water work with tarping does not have the benefit of collection and discharge to the sanitary sewer or treatment to the surface water criteria as is proposed at Dakota Creek for upland or drydock repair. Attaching tarps to floats is more difficult than from piers and the instability, exposure and size of floats increases the risk of spills. BMPs to minimize discharges to Guemes Channel are required.

EPA measured a high concentration of oil and grease in flood water discharges. A similar facility to Dakota Creek is Lake Union Drydock. At Lake Union Drydock only three exceedances above the detection limit, reported by Lake Union Drydock as 5 mg/L for oil and grease, occurred over the five-year permit cycle from Drydock 5. Five exceedances were reported from Drydock 6 and only one exceedance was reported from Drydock 7. All these occurred in the first two years of the permit cycle. The other 113 reported measurements were less than 5 mg/L. This means 93 percent of all measurements from all drydocks were less than 5 mg/L. The distribution of the data is neither normally nor log normally distributed but is a flat distribution at less than 5 mg/L. This prevents the common method of determining technology based effluent limits.

However, unquestionably if 5 mg/L has not been exceeded in the last three years of the permit cycle then it is an achievable discharge level at Dakota Creek, a similar facility. This level of control has also been achieved for drydock flood waters at Pacific Fishermen, Duwamish Shipyard, FOSS, and Northlake Shipyards. Dakota Creek has consistently achieved control of oil and grease discharges to 5 mg/l or non-detect. Based on this achieved level of control and the best professional judgment of the Department, an oil and grease effluent limitation of 5 mg/L is AKART for the flood water discharges from Dakota Creek drydocks.



To minimize oil and grease discharges, the Department will establish oil and grease effluent limitation of 5 mg/L for stormwater from the Syncrolift rails. This level of control is AKART and has been achieved at Dakota Creek and similar shipyards.

Hauling offsite or discharging to the sanitary sewer wastewater from cooking, dish washing, and showers is determined to be AKART.

Recycling of solvents on-site or off-site disposal is AKART. Zero discharge from maintenance shops is determined to be AKART.

Discharge of bilge water from ships on drydocks by hauling off-site for treatment or discharge to the sanitary sewerage system subsequent to approval is determined to be AKART.

Performance-based interim effluent limitations for Outfalls 001 are derived from formulas in Appendix E of the EPA Technical Support Document, March 1991, calculated based on the observed data from January 1999 to November 2002.

**Table 2: Interim Effluent Limitations**

	<b>Copper mg/L</b>	<b>Zinc mg/L</b>	<b>Nickel mg/L</b>	<b>Turbidity NTU</b>
Stormwater Outfall 001	6.16	10.20	0.096	608

The Urban Stormwater BMP Performance Manual, page 68, recommends turbidity as a surrogate for TSS. The Department concurs. The lighter, more difficult-to-control solids measured as turbidity determined by light diffraction are more difficult to control than the solids measured as total suspended solid determined by mass. If turbidity is controlled, then TSS will be controlled. The elimination of the TSS limit and monitoring will not increase pollutant discharges. Past monitoring has demonstrated pH from shipyards is not a pollutant of concern.

The following permit limitations are necessary to satisfy the requirement for AKART for discharges to the Anacortes Sanitary Sewer. These concentrations have been achieved by shipyards and boatyards for pressure wash wastewater and stormwater discharges to the sanitary sewer. These limits are established in the Boatyard General Permit covering 130 facilities statewide. These levels have also been protective of the collection and treatment systems. Pollutant concentrations in the proposed discharge with technology-based controls in place will not cause problems at the receiving POTW, such as interference, pass-through, or hazardous exposure to POTW workers nor will it result in unacceptable pollutant levels in the POTW's sludge.

**Table 3: Effluent Limitations for Hydroblast and Stormwater Discharges to the Sanitary Sewer System**

Parameter	Maximum Daily
Total Recoverable Copper	2.4 mg/L
Total Recoverable Lead	1.2 mg/L
Total Recoverable Zinc	3.3 mg/L

#### *SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS*

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established surface water quality standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

#### NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in receiving water while remaining protective of aquatic life. Numerical criteria set forth in the water quality standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

#### NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other diseases and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

#### NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

#### ANTIDegradation

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

#### CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic waterbody uses.

#### MIXING ZONES

The water quality standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known available and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria. A mixing zone is not granted in this reissuance. A mixing zone may be granted by permit modification after completion of an acceptable mixing zone analysis and receiving water study.

#### DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the Guemes Channel indirectly by way of the City of Anacortes' storm drain system which discharges into a small bay of Guemes Channel. Guemes Channel is designated a Class A marine water in the vicinity of the outfall. Other nearby point source outfalls includes two petroleum refineries and boatyards. Significant nearby non-point sources of pollutants include urban stormwater runoff. Characteristic uses include the following:

fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

The waterbody identification number, WA-03-0020, refers to a portion of Puget Sound that includes Guemes Channel, Padilla Bay, and Fidalgo Bay. This waterbody is not listed on the State 303(d) list indicating non-attainment of water quality standards. However, monitoring shows that the waterbody is not meeting all the beneficial uses attributed to Class A water. The 305(B) report on water quality in Washington State shows that the beneficial use of clam, oyster and mussel harvesting has been impaired due to habitat changes, and fecal coliform and petroleum pollution. The sources of the pollution include the high concentration of petroleum-related industry in the waterbody, spills and other unidentified sources. It is believed that non-point sources of pollution are the primary cause of elevated fecal coliform levels. Guemes Channel is 303d listed for PCB-1254 from detection in mussels.

#### SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Turbidity	less than 5 NTU above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

Federal criteria for oil and grease is this:

Waters are to remain essentially free of oil and grease of petroleum origin.

#### CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near-field) or at a considerable distance from the point of discharge (far-field). Toxic pollutants, for example, are near-field pollutants—their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water. A mixing zone is not granted in this reissuance.

Oil and Grease--The federal criteria for oil and grease in the *Quality Criteria for Water, 1986*, is this: "that surface waters shall be virtually free....from floating oils of petroleum."

Bioaccumulation of petroleum products presents two especially important public health problems: (1) the tainting of edible, aquatic species, and (2) the possibility of edible marine organisms incorporating the high boiling, carcinogenic polycyclic aromatics in their tissues. Oils of any kind can cause drowning of water fowl because of loss of buoyancy, exposure because of loss of insulating capacity of feathers and starvation and vulnerability to predators because of lack of mobility, lethal effects on fish by coating epithelial surfaces of gills, thus preventing respiration, asphyxiation of benthic life forms when floating masses become

engaged with surface debris and settle on the bottom and adverse aesthetic effects of fouled shorelines and beaches. Oil pollutants may also be incorporated into sediments. There is evidence that once this occurs in the sediments below the aerobic surface layer, petroleum can remain unchanged and toxic for long periods, since its rate of bacterial degradation is slow. The Department determines 5 mg/L oil and grease limit, no visible oil sheen, discoloration or turbidity meets this requirement. Monitoring will be by grab sample, visual observation, and logging and noncompliance notification.

Turbidity--Due to the potential fluctuations in turbidity of the receiving water and the effluent, turbidity monitoring is required to assess compliance with the water quality criteria for turbidity. The criteria for turbidity allows no more than a 5 NTU increase over background turbidity.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the water quality standards for surface waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge: copper, nickel and zinc.

The determination of the reasonable potential for copper, nickel, and zinc from stormwater outfall 001 exceed the water quality criteria was evaluated with procedures given in EPA, 1991 (Appendix C) at the critical condition. Even with virtually no background, Dakota Creek stormwater discharges violate criteria.

Effluent limits were derived for copper, nickel, zinc, oil and grease, and turbidity which were determined to have a reasonable potential to cause an exceedance of the water quality standards. Effluent limits were calculated using methods from EPA, 1991, as shown in Appendix D.

The resultant effluent limits are as follows:

<b>INTERIM EFFLUENT LIMITATIONS: OUTFALL 001 TO GUEMES CHANNEL</b>	
<b>Parameter<sup>1</sup></b>	<b>Maximum Daily<sup>a</sup></b>
Oil and Grease	5 mg/L
Oil and Grease	No Visible Sheen
Turbidity	608 NTU
Total Recoverable Copper	6.16 mg/L
Total Recoverable Nickel	0.096 mg/L
Total Recoverable Zinc	10.20 µ/L
<sup>a</sup> The maximum daily effluent limitation is defined as the highest allowable daily discharge.	

The proposed permit contains a compliance schedule for meeting the water quality-based limits for copper, nickel, zinc, and turbidity. Prior to authorizing this compliance schedule, the Department required the Permittee to evaluate the possibility of complying with the limitations by changes other than construction.

The proposed permit contains interim limits for copper, nickel, zinc, and turbidity as required by Chapter 173-201A-170(4)(b)WAC. The limits are based on existing demonstrated performance.

Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal.

The Permittee may provide data clearly demonstrating the seasonal partitioning of the dissolved metal in the ambient water in relation to an effluent discharge. Metals criteria may be adjusted on a site-specific basis when data is available clearly demonstrating the seasonal partitioning in the ambient water in relation to an effluent discharge.

Metals criteria may also be adjusted using the water effects ratio approach established by USEPA, as generally guided by the procedures in USEPA Water Quality Standards Handbook, December 1983, as supplemented or replaced.

#### WHOLE EFFLUENT TOXICITY

The water quality standards for surface waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

In accordance with WAC 173-205-040, the Permittee's effluent has been determined to have the potential to contain toxic chemicals. The proposed permit would ordinarily contain requirements for whole effluent toxicity testing as authorized by RCW 90.48.520 and 40 CFR 122.44 and in accordance with procedures in Chapter 173-205 WAC. However, the Permittee is improving pollution control in order to meet other regulatory requirements. The results of an effluent characterization for toxicity would not be accurate until after the improvements have been completed.

WAC 173-205-030(4) allows the Department to delay effluent characterization for WET for existing facilities that are under a compliance schedule in a permit to implement technology-based controls or to achieve compliance with surface water quality-based effluent limits. Dakota Creek's preferred alternative is discharge to the sanitary sewer system. If discharge continues to the Guemes Channel WET testing may be required by order or permit modification.

#### HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health.

#### SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined that this discharge has the potential to cause a violation of the sediment quality standards because of copper and zinc. This is based on past studies including "Site Inspection Report," Port of Anacortes-Dakota Creek Industries, Anacortes, Washington TDD: 01-01-0027" dated June 28, 2002, prepared by Weston Solutions, Inc., under contract with EPA. The report states analytical results for sediment samples collected in the intertidal zone and the inner and outer harbors indicate the present of VOCs, organotins, and metals at elevated concentrations above background. Typically the highest concentrations of most detected analytes were observed near the marine railway and offshore from it, followed by sampling locations off-shore from the old marine railway. Generally, the highest concentrations were observed in the intertidal zone and decreased towards the outer harbors. A cluster of detections at elevated concentrations above background was observed near the west end of the dry dock. The elevated metals included copper, tributyl tin, lead, mercury, zinc, barium, and arsenic. VOCs included polyaromatic hydrocarbons. A condition has been placed in the proposed permit which requires the Permittee to submit any existing data in SEDQUAL format. This submittal will be reviewed by the Department to see if the sampling collection and analysis meet current requirements for surface sediment and can be used as an indicator of surface sediment quality in the vicinity of Dakota Creek's outfalls. The Department will evaluate whether previous sampling events address surface sediment quality, before the next permit cycle in which sediment monitoring may be required. The Department concludes that sediment monitoring should not be included in the upcoming NPDES permit due to Dakota Creek Industries and Port of Anacortes Channel dredging that is to occur in the vicinity of the subject discharge during the upcoming permit cycle.

Sediment quality standards are exceeded for arsenic, copper, mercury, zinc, semi-volatile low and high PAHs.

#### GROUND WATER QUALITY LIMITATIONS

The Department has promulgated ground water quality standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

The previous fact sheet stated, "Dakota Creek Industries has agreed to discontinue use of the marine railway for repair work. Because there will be no further discharges to the ground in the unpaved areas, no limitations are required based on potential effects to ground water." Dakota Creek has converted the old unpaved marine railway site to a fabrication area.

According to the "Port of Anacortes-Dakota Creek Industries, Inc., Preliminary Assessment Report, Anacortes, Washington" groundwater conditions underlying the site have not been characterized. None of the reports from previous investigations contain information regarding

the groundwater beneath the site; however it is estimated that the water table is located at approximately 4 to 8 feet below the surface. One municipal well system is between one and two miles away. It concluded that all the approximately 260 wells within 4 miles of the site are screened in the same geologic unit. Soil borings by Otten Engineering in 1997 found fill material in the area from 0 to at least 3 feet below ground surface and consists of silty sand. From 3 to 11.5 feet below ground surface the soil is comprised of fine sand with scattered shell fragments. Based on these compositions, the surface soils at Dakota Creek were presumed medium textured soil with moderate infiltration rates. A review of the report entitled "Compilation Report, Independent Cleanup Action, Dakota Creek Industries Shipyard Facility, Anacortes, Washington" found no violations of state ground water quality criteria (WAC 173-200-040). However, Monitoring Well #1 (Table 4) ground water quality tests have shown exceedances to copper surface water quality standards for marine waters.

*COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED AUGUST 5, 1995 AND MODIFIED MAY 7, 1996*

	<b>Existing Limits</b>	<b>Proposed Limits</b>
<b>Pressure Wash Wastewater</b>	No Direct Discharge	No Direct Discharge
Sewage and Grey Water	Oil and Grease Limit of 10 mg/L, No Visible Sheen, No Oily bilge water or contaminants	No Direct Discharge
Stormwater		
Oil and Grease	None	5 mg/L Daily Maximum
Turbidity	None	608 NTU interim discharge limit Compliance with criteria by March 1, 2010
Total Recoverable Copper	None	Interim Limit 6.16 mg/L Compliance with criteria by March 1, 2010
Total Recoverable Nickel	None	Interim Limit 0.096 mg/L Compliance with criteria by March 1, 2010
Total Recoverable Zinc	None	Interim Limit 10.20 mg/L Compliance with criteria by March 1, 2010
<b>Drydock Receiving Water</b>		
Oil and Grease	10 mg/L Daily Maximum 15 mg/L Monthly Average	5 mg/L No Visible Sheen
Turbidity	5 NTU above background	None
pH	Within a range of 6.0 to 9.0	None



## **MONITORING REQUIREMENTS**

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

Drydock flood water monitoring is eliminated except for oil and grease. Flood water discharges are indistinguishable and are masked by receiving source water.

Stormwater monitoring for metals, oil and grease, and turbidity is being required to further characterize the effluent. These pollutants could have a significant impact on the quality of the surface water.

This permit requires the Permittee to monitor the stormwater outfalls on a twice per month schedule consistent with Hansen, Pacific Fishermen, and Fishing Vessel Owners Marine Ways, Puglia Engineering, and TODD Pacific.

A visual observation and log with photographs shall be maintained of each lowering of the drydocks.

### **LAB ACCREDITATION**

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*.

## **OTHER PERMIT CONDITIONS**

### **REPORTING AND RECORDKEEPING**

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

### **NON-ROUTINE AND UNANTICIPATED DISCHARGES**

Occasionally, this facility may generate wastewater which is not characterized in their permit application because it is not a routine discharge and was not anticipated at the time of application. These typically are waters used to pressure test storage tanks or fire water systems or leaks from drinking water systems. These are typically clean waste waters but may be contaminated with pollutants. The permit contains an authorization for non-routine and unanticipated discharges. The permit requires a characterization of these waste waters for pollutants and examination of the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and opportunities for reuse, Ecology may authorize a direct discharge via the process wastewater outfall or through a stormwater outfall for clean water, require the wastewater to be placed through the facilities wastewater treatment process or require the water to be reused.

### *SPILL PLAN*

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

### *GENERAL CONDITIONS*

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

## **PERMIT ISSUANCE PROCEDURES**

### *PERMIT MODIFICATIONS*

The Department may modify this permit to impose numerical limitations, if necessary, to meet water quality standards for surface waters, sediment quality standards, or water quality standards for ground waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

### *RECOMMENDATION FOR PERMIT ISSUANCE*

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this proposed permit be issued for five years.

## REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control.  
EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Ecology.

Laws and Regulations ( <http://www.ecy.wa.gov/laws-rules/index.html> )

Permit and Wastewater Related Information  
( <http://www.ecy.wa.gov/programs/wq/wastewater/index.html> )

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

## APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public Notice of Application (PNOA) was published on November 22, 1997, and November 29, 1997, in the *Skagit Valley Herald* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department published a Public Notice of Draft (PNOD) on January 21, 2006, in the *Skagit Valley Herald* to inform the public that a draft permit and fact sheet were available for review. Interested persons were invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents were available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments were mailed to:

Water Quality Permit Coordinator  
Department of Ecology  
Northwest Regional Office  
3190 160<sup>th</sup> Avenue SE  
Bellevue, WA 98008-5452

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 425-649-7293, or by writing to the address listed above.

This permit and fact sheet were written by John Drabek.

## APPENDIX B--GLOSSARY

**Acute Toxicity**--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

**AKART**--An acronym for "all known, available, and reasonable methods of treatment."

**Ambient Water Quality**--The existing environmental condition of the water in a receiving water body.

**Ammonia**--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

**Average Monthly Discharge Limitation** --The average of the measured values obtained over a calendar month's time.

**Best Management Practices (BMPs)**--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

**BOD<sub>5</sub>**--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD<sub>5</sub> is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

**Bypass**--The intentional diversion of waste streams from any portion of a treatment facility.

**Chlorine**--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

**Chronic Toxicity**--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

**Clean Water Act (CWA)**--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

**Compliance Inspection - Without Sampling**--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

**Compliance Inspection - With Sampling**--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

**Construction Activity**--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

**Continuous Monitoring**--Uninterrupted, unless otherwise noted in the permit.

**Critical Condition**--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

**Dilution Factor**--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

**Engineering Report**--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

**Fecal Coliform Bacteria**--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

**Grab Sample**--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

**Industrial Wastewater**--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

**Major Facility**--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

**Maximum Daily Discharge Limitation**--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

**Method Detection Level (MDL)**--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

**Mixing Zone**--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

**National Pollutant Discharge Elimination System (NPDES)**--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

**pH**--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

**Quantitation Level (QL)**--A calculated value five times the MDL (method detection level).

**Responsible Corporate Officer**--A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

**Technology-based Effluent Limit**--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

**Total Suspended Solids (TSS)**--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

**State Waters**--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

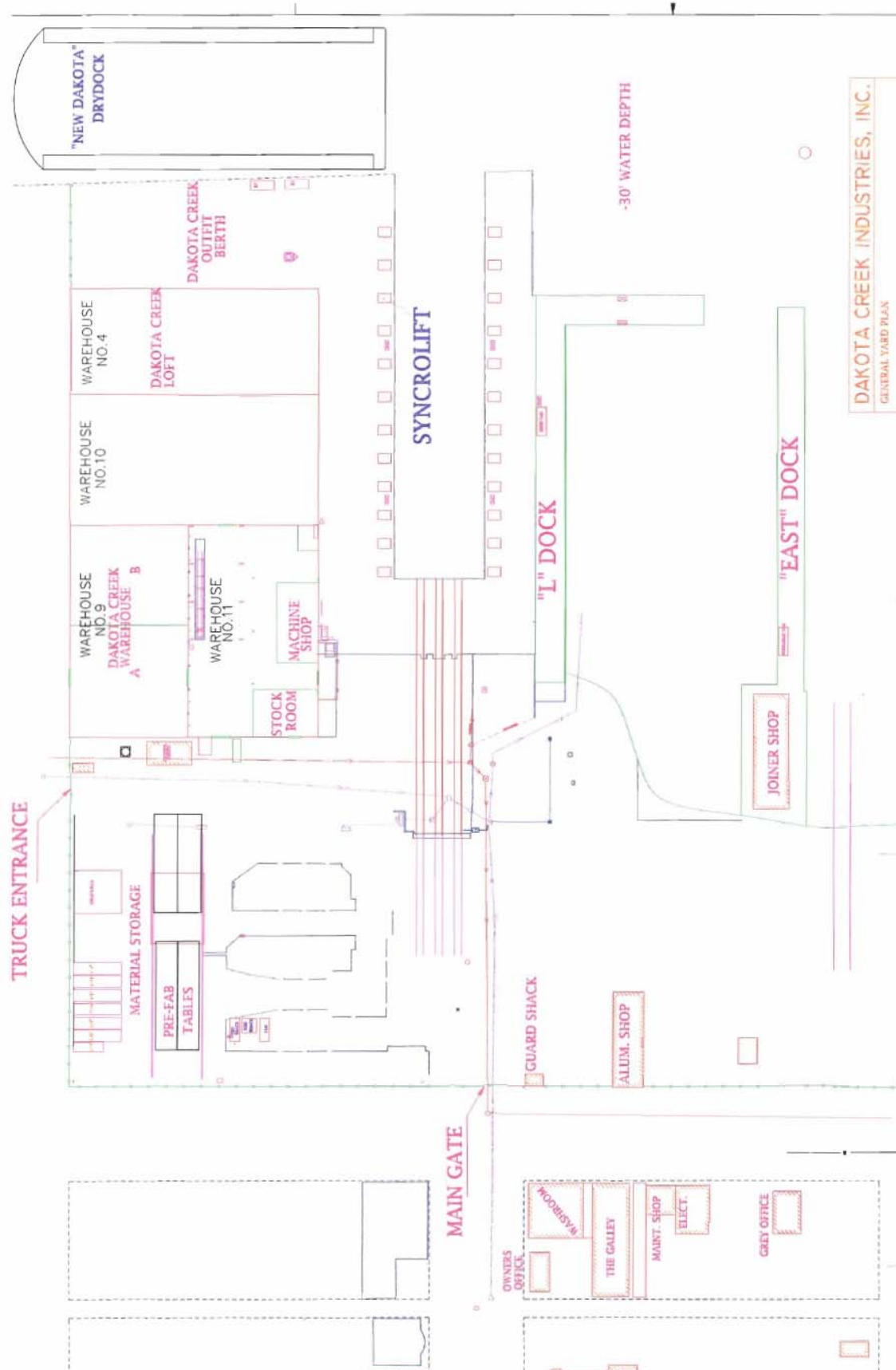
**Stormwater**--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

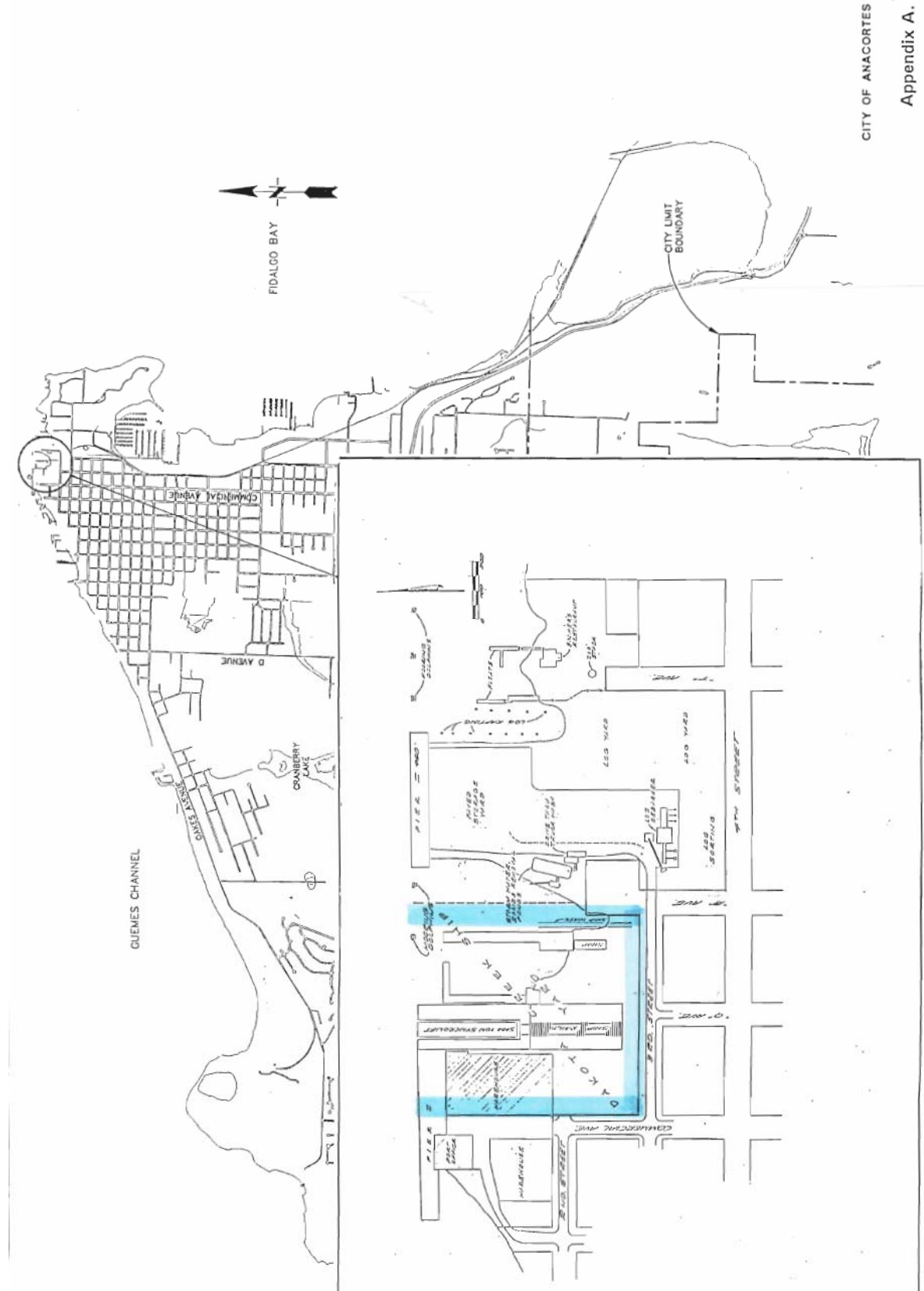
**Upset**--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

**Water Quality-based Effluent Limit**--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

**APPENDIX C—FIGURES**







## **APPENDIX D--TECHNICAL CALCULATIONS**

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at <http://www.ecy.wa.gov>.

## PERFORMANCE-BASED EFFLUENT LIMITS

LOGNORMAL TRANSFORMED MEAN =	3.07
------------------------------	------

NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =	2
---	---

$E(X) =$	26.5546
----------	---------

VARn	0.2268
------	--------

MEAN <sub>n</sub> =	3.1658
---------------------	--------

VAR( $X_n$ )=	179.532
---------------	---------

AVERAGE MONTHLY EFFLUENT LIMIT =	51.895
----------------------------------	--------

### Effluent Limits

### Turbidity

Acute Standard	4.8	210	1100	90	74	5 0ve
----------------	-----	-----	------	----	----	-------

No	No			Background
Potential	Potential			

PERFORMLIM

Outfall 1			Outfall 1		
TR Cr			TR CU		
MAX	X 1000	LN	MAX	X 1000	LN
MG/L	Ug/L		MG/L	Ug/L	
0.037	37	3.61	0.892	892	6.79
0.040	40	3.69	1.040	1040	6.95
0.027	27	3.30	0.390	390	5.97
0.037	37	3.61	1.020	1020	6.93
0.040	40	3.69	0.900	900	6.80
0.024	24	3.18	0.473	473	6.16
0.040	40	3.69	0.989	989	6.90
0.032	32	3.47	0.621	621	6.43
0.026	26	3.26	0.548	548	6.31
0.028	28	3.33	1.150	1150	7.05
0.066	66	4.19	2.460	2460	7.81
0.036	36	3.58	1.160	1160	7.06
0.023	23	3.14	0.830	830	6.72
0.020	20	3.00	0.570	570	6.35
0.019	19	2.94	0.535	535	6.28
0.018	18	2.89	0.232	232	5.45
0.033	33	3.50	1.110	1110	7.01
0.024	24	3.18	0.267	267	5.59
0.015	15	2.71	0.771	771	6.65
0.007	7	1.95	0.073	73	4.29
0.010	10	2.30	0.059	59	4.08
0.016	16	2.77	0.074	74	4.30
0.018	18	2.89	0.103	103	4.63
0.006	6	1.79	0.151	151	5.02
0.011	11	2.40	0.045	45	3.81
0.009	9	2.20	0.049	49	3.89
0.014	14	2.64	0.031	31	3.43
0.015	15	2.71	0.022	22	3.09
0.009	9	2.20	0.019	19	2.94
0.019	19	2.94	0.032	32	3.47
0.017	17	2.83	0.025	25	3.22
0.009	9	2.20	0.050	50	3.91
0.023			0.037	37	3.61
Ave.. Cr - Outfall 1			0.040	40	3.69
			0.431	431	6.07
	Mean	2.99	0.101	101	4.62
	Standard Error	0.10	0.101	101	4.62
	Median	2.97		Mean	5.35
	Mode	3.69	0.470	Standard Error	0.24
	Standard Deviation	0.58	Ave TR CU	Median	5.59
	Sample Variance	0.34	Outfall 1	Mode	4.62
	Kurtosis	-0.52		Standard Deviation	1.45
	Skewness	-0.22		Sample Variance	2.11
	Range	2.40		Kurtosis	-1.48
	Minimum	1.79		Skewness	-0.16
	Maximum	4.19		Range	4.86

PERFORMLIM

	Outfall 1			Outfall 1		
	TR Pb			TR Ni		
	MAX	X 1000	LN	MAX	X 1000	LN
	MG/L	Ug/L		MG/L	Ug/L	
	0.039	39	3.66	0.037	37	3.61
	0.055	55	4.01	0.045	45	3.81
	0.024	24	3.18	0.034	34	3.53
	0.043	43	3.76	0.042	42	3.74
	0.042	42	3.74	0.047	47	3.85
	0.028	28	3.33	0.025	25	3.22
	0.037	37	3.61	0.062	62	4.13
	0.026	26	3.26	0.036	36	3.58
	0.020	20	3.00	0.030	30	3.40
	0.030	30	3.40	0.031	31	3.43
	0.053	53	3.97	0.048	48	3.87
	0.037	37	3.61	0.040	40	3.69
	0.024	24	3.18	0.024	24	3.18
	0.021	21	3.04	0.022	22	3.09
	0.018	18	2.89	0.022	22	3.09
	0.011	11	2.40	0.018	18	2.89
	0.048	48	3.87	0.036	36	3.58
	0.005	5	1.61	0.020	20	3.00
	0.027	27	3.30	0.017	17	2.83
	0.029	29	3.37	0.009	9	2.20
	0.015	15	2.71	0.011	11	2.40
	0.015	15	2.71	0.013	13	2.56
	0.018	18	2.89	0.016	16	2.77
	0.022	22	3.09	0.016	16	2.77
	0.014	14	2.64	0.008	8	2.08
	0.285	285	5.65	0.008	8	2.08
	0.007	7	1.95	0.010	10	2.30
	0.006	6	1.79	0.005	5	1.61
	0.006	6	1.79	0.017	17	2.83
	0.021	21	3.04		Mean	3.07
	0.012	12	2.48		Standard Error	0.12
	0.017	17	2.83	0.026	Median	3.09
	0.019	19	2.94	Ave. Ni Outfall 1	Mode	3.58
	0.008	8	2.08		Standard Deviation	0.64
	0.015	15	2.71		Sample Variance	0.41
	0.005	5	1.61		Kurtosis	-0.55
	0.003	3	1.10		Skewness	-0.45
		Mean	2.98		Range	2.52
	0.030	Standard Error	0.14		Minimum	1.61
	Ave Pb	Median	3.04		Maximum	4.13
	Outfall 1	Mode	2.71		Sum	89.13
		Standard Deviation	0.85		Count	29.00
		Sample Variance	0.73			
		Kurtosis	1.77			
		Skewness	0.31			
		Range	4.55			

PERFORMLIM

Outfall 1			Outfall 1			
TR ZINC			TURBIDITY			
MAX	X 1000	LN	MAX	LN		
MG/L	Ug/L		MG/L			
2.28	2280	7.73	151.60	5.02		
3.70	3700	8.22	234.00	5.46		
1.80	1800	7.50	169.90	5.14		
2.91	2910	7.98	31.40	3.45		
2.62	2620	7.87	14.13	2.65		
0.96	955	6.86	288.00	5.66		
2.05	2050	7.63	41.80	3.73		
1.94	1940	7.57	202.00	5.31		
1.59	1590	7.37	183.00	5.21		
2.09	2090	7.64	132.00	4.88		
3.08	3080	8.03	65.00	4.17		
2.24	2240	7.71	219.00	5.39		
1.66	1660	7.41	112.00	4.72		
1.20	1200	7.09	124.00	4.82		
1.33	1330	7.19	180.00	5.19		
0.75	748	6.62	76.00	4.33		
1.79	1790	7.49	80.00	4.38		
0.47	469	6.15	10.00	2.30		
1.49	1490	7.31	28.00	3.33		
0.26	264	5.58	48.00	3.87		
0.27	269	5.59	53.00	3.97		
0.28	277	5.62	19.00	2.94		
0.28	280	5.63	45.00	3.81		
0.41	407	6.01	88.00	4.48		
0.13	133	4.89	23.00	3.14		
0.24	237	5.47	70.00	4.25		
0.19	188	5.24	20.00	3.00		
0.09	85	4.44	21.00	3.04		
0.11	109	4.69	18.00	2.89		
0.10	96	4.56	52.00	3.95		
0.09	88	4.48	29.00	3.37		
0.19	191	5.25	26.00	3.26		
0.12	124	4.82	16.00	2.77		
0.11	106	4.66	18.00	2.89		
0.74	735	6.60	88.80	4.49		
0.34	342	5.83	19.00	2.94		
0.40	396	5.98	2.50	0.92		
			81.03			
1.09	Mean	6.40	Ave. Turbidity			
Ave. Zinc Outfall 1	Standard Error	0.20	Outfall 1			
	Median	6.60	Mean	3.92		
	Mode	#N/A	Standard Error	0.18		
	Standard Deviation	1.22	Median	3.95		
	Sample Variance	1.49	Mode	2.94		
	Kurtosis	-1.45	Standard Devia	1.07		
	Skewness	-0.17	Sample Varian	1.14		

PERFORMLIM

	Range	3.77	Kurtosis	0.07		
	Minimum	4.44	Skewness	-0.41		
	Maximum	8.22	Range	4.75		
	Sum	236.73	Minimum	0.92		
	Count	37.00	Maximum	5.66		
			Sum	145.12		
			Count	37.00		



## Outfall 2

[illegible]

## APPENDIX E--RESPONSE TO COMMENTS

The Department received comments from People for Puget Sound, Perkins Coie, the Port of Anacortes, Dakota Creek Industries, and RE Sources.

1. The proposed permit limitations are 1000 times the acute marine criteria protective of marine health and more than 10 times the actual wastewater characterization. Note that the benchmark limits for copper found in the boatyard general permit range from 77-384 µg/L and the limit for copper for facilities discharging to an infiltration basin located at least 200 feet from the water's edge is 1000 µg/L. Even the large 1000 µg/L limit is 6 times less than the prescribed as an interim limit! Please set permit limits in line with actual adverse impacts to biota.

We support the comments submitted for this permit by North Sound Baykeeper/RE Sources. Copper, zinc and nickel should be regulated at levels that are protective of the biota of Puget Sound now – not in 2010. The facility should cease discharging metals at this time, as has been accomplished by other similar facilities. Copper, especially, is not protective of juvenile salmon at any concentration.

**Response:** Interim effluent limitations in Condition S1.B are based on past performance using best management practices and a small catch basin. The limits are technology-based and are required by the Water Pollution Control RCW 90.48 as All Known, Available and Reasonable Methods of Control. WAC 173-201A-160(4) (b) also requires interim limits when a compliance schedule is established.

The derivation of interim limits is based on EPA's Technical Support Document and the methodology is in Appendix D - Technical Calculations of the Fact Sheet. Interim limits are established at the 95<sup>th</sup> percentile of achieved effluent concentrations. Variability is also included in the derivation as the log normally transformed variance and is applied to the log normally transformed mean. The site specific variability of the intermittent stormwater discharges from Dakota Creek increased the interim limit more than from a steady state continuous discharge so the results may appear higher than using more uniform discharge data from other sources.

Final effluent limitations are in S1.C. Final effluent limitations are the Water Quality Standards for Surface Waters of the State of Washington Chapter 173-201A WAC and are significantly less than the benchmarks in the Boatyard General Permit. The standards protect the beneficial uses of waters of the state including the biota.

Parameter	Final Effluent Limitation Dakota Creek	Final Benchmark Boatyard General Permit Marine Water
Copper	4.8 µg/L	229 µg/L
Nickel	74 µg/L	None µg/L
Zinc	90 µg/L	None µg/L
Oil & Grease	5 mg/L	6 mg/L

The final copper benchmark for the Boatyard General Permit is 47.7 times greater than the final effluent limit for Dakota Creek Industries and is less protective than the effluent limits in the Dakota Creek permit.

Also, the benchmarks in the Boatyard Permit are not directly enforceable as they are not effluent limitations. The final effluent limitations for Dakota Creek are enforceable.

However, these limits may increase by permit modification if a site specific mixing zone is granted using site specific background concentrations, discharge concentrations, salinity, buoyancy, stratification, temperature, bottom roughness, tides, turbulence, whether bounded or unbounded, momentum flux, discharge flow rates, 7Q10 receiving water flows for Guemes Channel, the outfall locations at Dakota Creek depending if they are subsurface, at surface, or above surface discharges. A mixing zone will only be granted if it is submitted and approved by the Department and is as small as practicable.

2. The facility should cease discharging metals at this time, as has been accomplished by other similar facilities. Limits should be set to protect biota now not in 2010.

**Response:** The other facilities are shipyards. All NPDES permits grant a compliance schedule to existing shipyards to achieve the state water quality standards promulgated in WAC 173-201A-040. Requiring immediate cessation of stormwater discharges would put Dakota Creek Industries in an untenable position. Also, after immediate cessation Dakota Creek would have to change its collection and treatment system to incorporate the Pier I Redevelopment, and then change it again when granted a mixing zone. Integrating compliance with state water quality standards in an orderly manner incorporating the Pier I Redevelopment Project, a mixing zone, a receiving water study and review, and approval of an engineering report for storm water is a logical sequence and will save Dakota Creek spending money needlessly to attain the same result, achievement of the state criteria and protection of the beneficial uses of Puget Sound.

However, the Department and Dakota Creek agree that the Redevelopment Project will not unduly delay attainment of state water quality criteria. We agree that the Redevelopment Project is not an open-ended ticket to continue violating the state water quality standards.

3. Lead should be a limited pollutant for a facility of this type.

**Response:** The Department used the technical support document to determine a reasonable potential for lead to be discharged. The table in Appendix D shows that at the 95<sup>th</sup> percentile level, lead is 168 µg/L below the standard of 210 µg/L.

4. The interim standards set forth in the Permit are significantly higher than those imposed in NPDES permits issued for the other Puget Sound shipyards. The Fact Sheet is not clear as to Ecology's rationale for these higher limits. We would appreciate an explanation.

**Response:** The interim limit for Puglia Engineering is 2,968 µg/L copper and 8,212 µg/L for zinc using the same methodology in EPA's Technical Support Document. In this permit they are 6,160 and 10,200 µg/L. The explanation is the significant variability of metals in stormwater discharges. Interim limits for shipyard stormwater discharges are almost always well above the state water quality standards by orders of magnitude.

5. The facilities discharge to Puget Sound will be significantly improved by the redirection of the pressure wash wastewater to the City's sewage treatment plant.

**Response:** Pressure wash wastewater has not been discharged to Puget Sound since February 1996 when it was prohibited in the NPDES permit. Discharges are now authorized to the Anacortes Wastewater Treatment Facility. Elimination is also accomplished by treatment and recirculation using electro flocculation.

6. The chronic limits for copper, nickel, and zinc are lower than the acute limits, yet they are not mentioned nor used for comparative purposes. (They are 3.1, 8.2 and 81 µg/L respectively).

**Response:** The chronic criteria are based on a four-day average. Stormwater discharges are not continuous for four days so the chronic criteria do not apply.

7. We are opposed to a mixing zone for this facility.

**Response:** The Department has and will continue to grant mixing zones for stormwater discharges if an approved site specific model is used.

8. Submittal dates should be tied to approvals of previous reports or work plans instead of setting "hard" dates.

**Response:** The Department partially concurs. The receiving water study plan, engineering report for stormwater and final compliance schedule for meeting state water quality standards will remain hard dates. The actions depending on approval will be changed to a number of days after approval. These are the effluent mixing study plan, the effluent mixing study report, and the receiving water study results.

9. The July 1, 2006, deadline for the Receiving Water Study Plan depends on a Final Permit Issuance date of March 1, 2006. If a public hearing is requested, that could delay the whole process. All subsequent dependant dates would need to be revised accordingly. We suggest 15 months after approval of the Receiving Water Study.

**Response:** A hearing is not requested and none will be held hence the sequence leading to compliance with water quality standards will not be delayed. Fifteen months is close to the sixteen months in the draft permit. The Department will change the date of the receiving water study results submittal to 15 months after approval of the Receiving Water Study Plan.

10. The oil and grease effluent limits should be maintained at their current levels specifically 10 mg/L monthly average and 15 mg/L daily maximum. While the facility has been able to achieve 5 mg/L over the last permit period, future paving at the site, as proposed in the Redevelopment Project, may result in greater runoff volumes without the benefit of infiltration and sorption of oils to soil particles. Asphalt itself is made of petroleum products which could leach out over time. 10 mg/L monthly average and 15 mg/L daily maximum are used in other permits throughout the state so should apply unilaterally. This should apply at least through the term of this permit as that should cover the period of construction activity.

**Response:** The Department will take into consideration construction activities at the site in enforcement actions, but the 5 mg/L oil and grease limit is AKART. This level of control has also been achieved at Pacific Fishermen, Duwamish Shipyard, FOSS and Northlake Shipyard, MARCO, Puglia Engineering and Hansen Boatyard and is AKART for the shipyard source category. These facilities are paved with asphalt and do not have the benefit of adsorption of oils to soil particles. Tarping and cleanup with a spill prevention plan is AKART for oil and grease, not adsorption to the surface of soil particles following a spill or lack of maintenance. AKART applies to both ground water and surface water discharges.

11. DCI proposes adding the words "If required..." to the beginning of the first sentence as much will depend on the results of the Mixing Study. The submittal date should be tied to Ecology approval of the Stormwater Mixing Study. We propose "...six months following Ecology approval of the Stormwater Mixing Study.

**Response:** Once the Department approves the mixing zone plan of study, running the model should take a few days and no more than a month. The Department will maintain the 120-day time period to submit the Effluent Mixing Report after Department approval.

12. DCI still feels that the design storm water should be established as the 6-month, 24-hour precipitation event. That is the design storm specified in Ecology's Stormwater Management Manual for Western Washington and is used throughout the state. Using the design storm from other shipyards may not be appropriate depending on various factors, including the drained and infiltration potential. The 10-year storm event may be cost prohibitive.

**Response:** The ten-year design storm is AKART for all shipyards recently permitted in the Northwest Regional Office. If a source category can achieve a level of control more stringent than written in the *Stormwater Management Manual*, the permit writer must include it as AKART in permits for that category.

Also, untreated discharges from shipyards, such as overflow bypasses of Dakota Creek's treatment system, will likely cause violations of state water quality standards.

WAC 173-201A-060(6) No waste discharge permit shall be issued which results in a violation of established water quality criteria," outside the boundary of a mixing zone.

WAC 173-201A-060(5) Waste discharge permits, whether issued pursuant to the National Pollutant Discharge Elimination System or otherwise, shall be conditioned so the discharges authorized will meet the water quality standards.

These two regulations argue for a stormwater design that prohibits any uncontrolled industrial stormwater bypasses from Dakota Creek Industries as the uncontrolled discharges are likely to violate this regulation. The Department will maintain the 10-year, 24-hour design storm.

13. The fact sheet under Summary of Compliance with the Previous Permit should be changed to restate discharges above state criteria as exceeded water quality criteria instead of violated the marine water quality standards.

**Response:** The question goes to if a mixing zone is granted, than these discharges will not be violations. The permit does not grant a mixing zone. Stormwater discharges above the state standards for marine water in WAC 173-201A-060 are violations of the state water quality standards. If a mixing zone is granted in a future modification, it will not be retroactive.

14. The Department cannot state that discharges "violate" water quality standards since the receiving water quality is not known.

**Response:** The average discharge concentration of copper is 390 µg/L and the criteria is 4.8 µg/L. Even if the background was zero, than the average discharge from Dakota Creek would be about 385 µg/L above the state standard or 80 times the standard. Clearly, Dakota Creek Industries is violating state standards with virtually every industrial stormwater discharge.

15. Sediment quality discussions should be deleted entirely. This dissertation is largely mute due to its scheduled dredging as part of the Pier 1 Redevelopment Project. It serves no purpose to have this included.

**Response:** Documenting impacts of sediment off the end of the drydock and elsewhere in the intertidal zone and the Department's determination that Dakota Creek discharges has the potential to cause a violation of the sediment quality standard because of copper and zinc are necessary characterize both the discharges and the sediment. The Department agrees that dredging for the drydock will change the characteristics and will delay the sediment monitoring until the next permit cycle.